



EVERYTHING MATTERS



# Energy Storage to support Con Edison's Distributed System Platform

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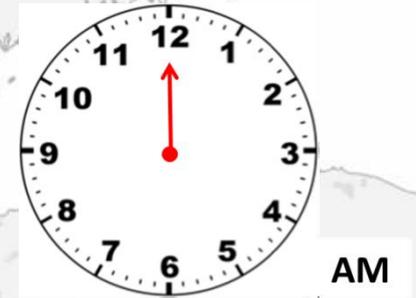
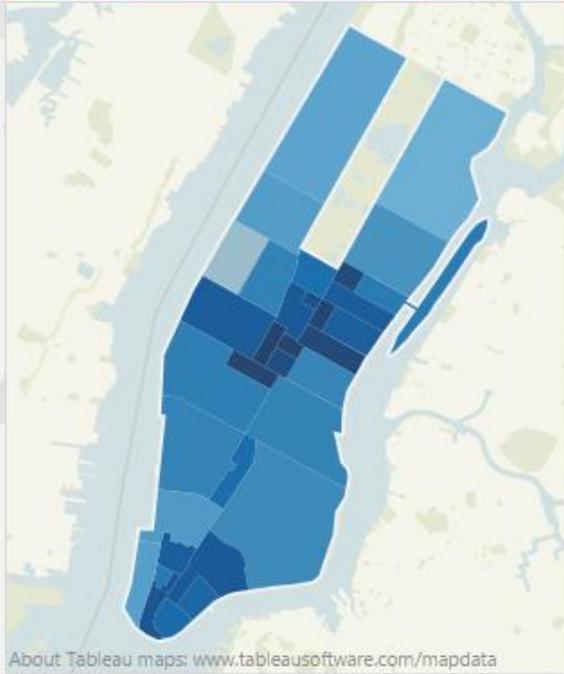


# Energy Storage in New York

- Pumped storage
  - Used for black start and peak shaving
  - Limited applicability
- Battery systems
  - Emerging technology
  - Evaluating use technologies
  - Working with FDNY
- Other technologies
  - Evaluating via R&D (super caps, flow batteries, etc)

# Peak Day Loads by Network

## Manhattan Networks



Hour  
24



# System Expansion Project: Learn from BQDM

**Deferral of ~1 billion in traditional network upgrades with distributed solutions**

- Meets capacity shortfall via \$200 million program
  - Customer Sided 41 MW (\$150 m)
  - Utility-sided solutions 11 MW (\$50 m)
  - Glendale 60 MW
- Long duration, night peaking network requires a portfolio of solution
- The effective DER contribution can be located anywhere within the foot print



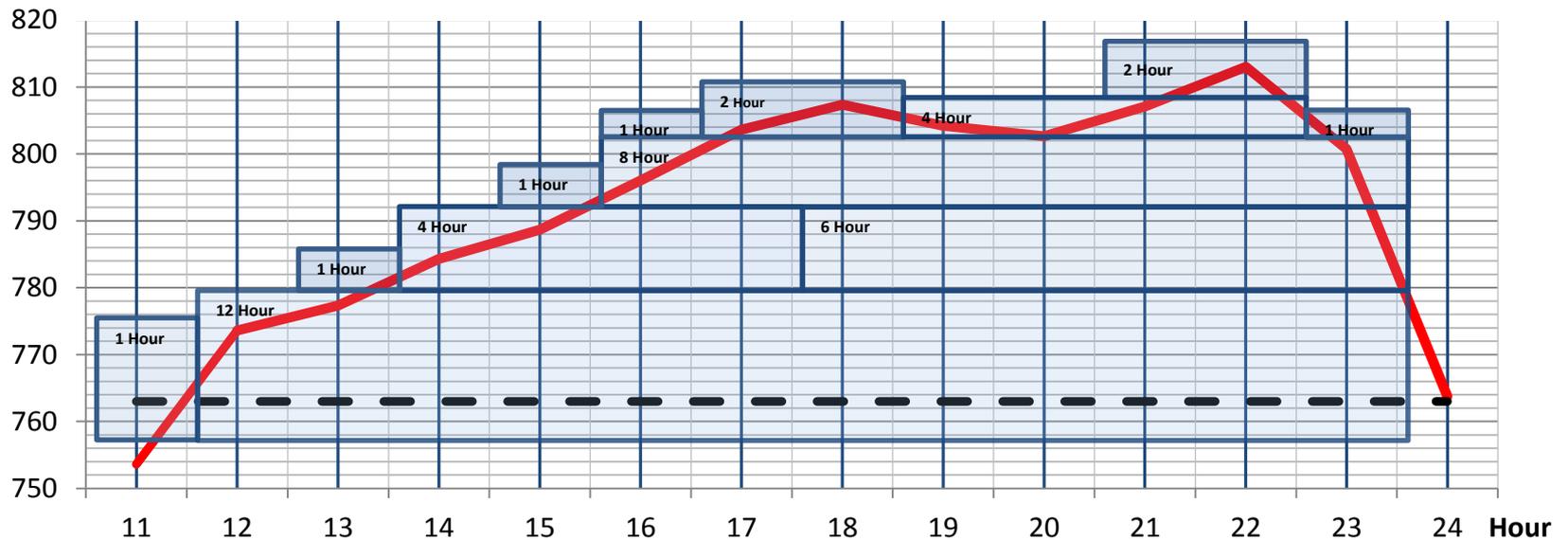
# Brooklyn-Queens Demand Management

Description

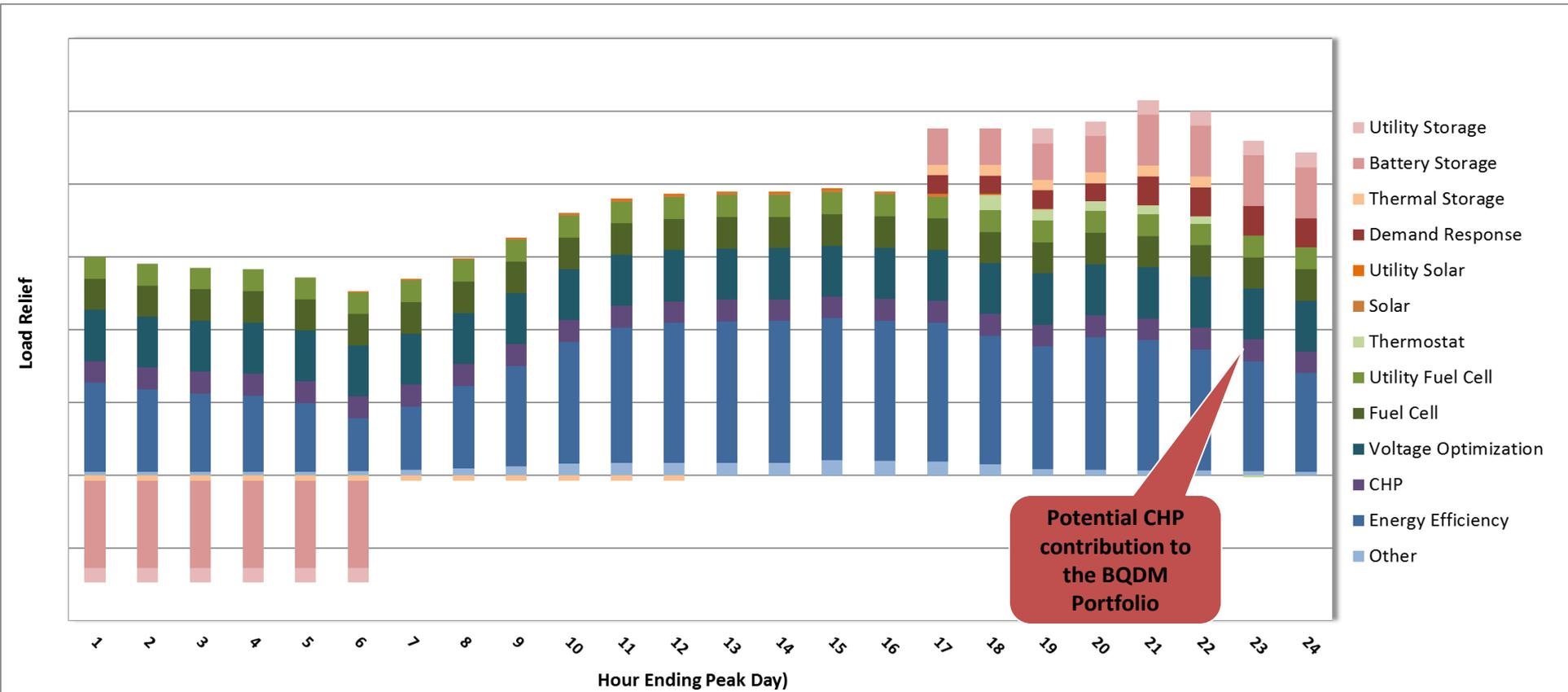


- \$1 billion substation deferral using portfolio of alternative investments in Brownsville network
- Earn rate-of-return plus incentive based on implementation

Sample Network Peak Day Load Curve



# Illustrative BQDM Portfolio



# Battery Storage System arriving in 2017



12 MWh of energy in Lithium Iron Phosphate batteries

# Energy Storage in New York

- Utilities allowed to own energy storage
- Use case under development
  - BQDM
  - Virtual power plant demo
  - Large scale storage demo (including mobile storage)
- Working with stakeholders
  - Vendors
  - FDNY
  - NY Best